

NSPS SUBPART 0000 OVERVIEW

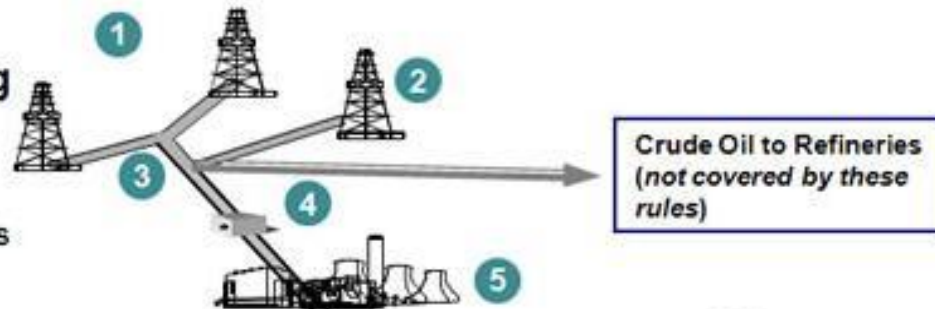


Oil & Gas Sectors

Natural gas systems encompass wells, gas gathering and processing facilities, storage, and transmission and distribution pipelines.

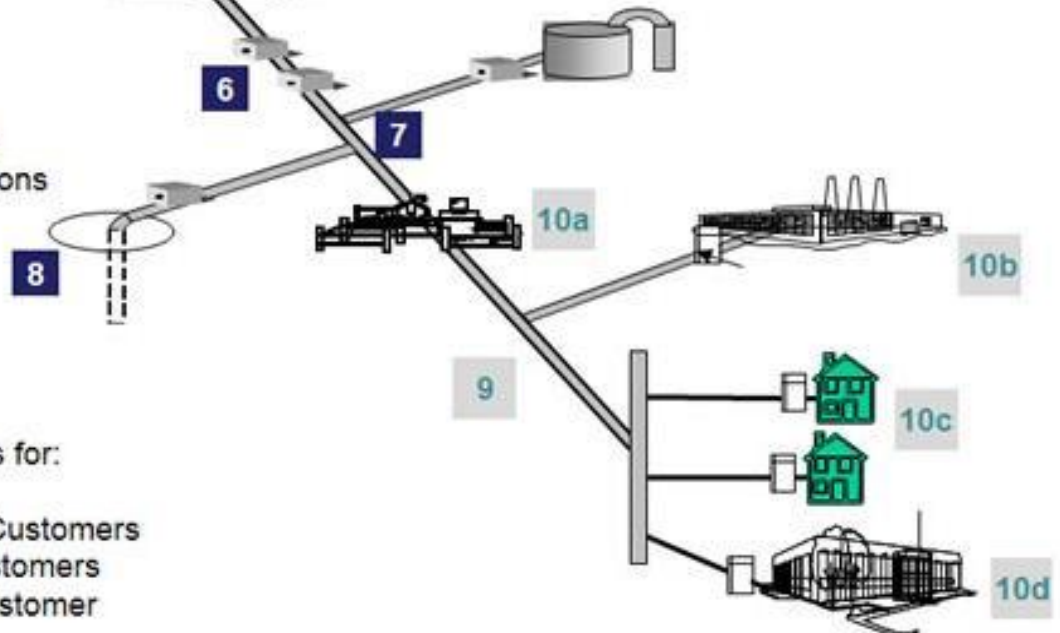
Production & Processing

1. Drilling and Well Completion
2. Producing Wells
3. Gathering Lines
4. Gathering and Boosting Stations
5. Gas Processing Plant



Natural Gas Transmission & Storage

6. Transmission Compressor Stations
7. Transmission Pipeline
8. Underground Storage



Distribution

9. Distribution Mains
10. Regulators and Meters for:
 - a. City Gate
 - b. Large Volume Customers
 - c. Residential Customers
 - d. Commercial Customer

Source: Adapted from American Gas Association and EPA Natural Gas STAR Program

What NSPS OOOO Addresses

- **Incorporates requirements of NSPS KKK & LLL**
- **Facilities built/modified after 8-23-2011**
- **Facilities between the wellhead and custody transfer point to transmission/distribution segment (i.e. production segment)**
- **Affected facilities include:**
 - **well completions (fractured/re-fractured)**
 - **wet seal centrifugal and reciprocating compressors (post wellhead)**
 - **Continuous bleed natural gas driven pneumatic controllers**
 - **storage vessels in all oil and gas production segments**
 - **small glycol dehydrators at well production pads (MACT HH)**
 - **sweetening units at gas processing plants**
- **Notification & reporting requirements for “green completion” of production wells**
- **Some instances of split applicability for old (KKK & LLL) vs new (OOOO) requirements.**
- **3 year phased-in compliance deadline (generally October 15, 2015)**

Proposed Rule August 23, 2011

Final Rule 77 FR 49489, 8-16-2012

- **Changes were made based on comments from public and industry**
- **Highly politicized rulemaking – more changes have occurred after final rule issued**
- **Updated definition for a “green completion”**
 - **Changed to focus on performance instead of technology**
 - **Allows greater operational flexibility**
 - **Lowered completion costs**
 - **Reduces burden on equipment manufacturing/distribution**
- **Eliminates state permitting trigger when wells are refractured using green completions instead of flaring**
- **Compressors and pneumatic controllers in the transmission segment NOT included**

Compliance Incentives & Benefits

- **Key feature - capture natural gas from hydraulically fractured production wells (gas going to waste currently)**
- **Cost-effective - recovered natural gas revenue expected to offset costs, savings estimated \$11–19 million in 2015**
- **Operational flexibility with environmental benefits**
- **Phase-in period - install gas capture equipment before compliance deadlines**
- **Requirements based on performance, not specific technology**
- **Incentive to modernize equipment, reduce pollution early**
- **Reduce VOC emissions, especially in O3 non-attain areas**
- **Reduce air toxics emissions - serious health problems**
- **Secondary benefit of reducing methane (GHG)**

Compliance Deadlines

Rule	Affected facility	Requirement	Compliance Dates - New Sources after 8/23/2011
NSPS OOOO	Hydraulically fractured gas wells	Combustion device for flowback emissions	10/15/2012
NSPS OOOO	Wet seal centrifugal compressors	Reduce emissions by 95 %	10/15/2012
NSPS OOOO	Reciprocating compressors	Change rod packing at 26K hours or 36 months	10/15/2012
NSPS OOOO	Natural gas plant continuous bleed pneumatic controllers	Bleed rate = Zero	10/15/2012
NSPS VVa	Gas processing plant equipment leaks	Implement LDAR program	10/15/2012
NSPS LLL	Gas processing plant sweetening units	SO2 emission reduction efficiency based on sulfur feed rate & sulfur content of acid gas	10/15/2012
NSPS OOOO	Continuous bleed pneumatic controllers >6 scfh, wellhead to gas processing plant	Bleed rate <6 scfh	10/15/2013
NSPS OOOO	Storage vessel VOC emissions \geq 6 TPY	Reduce emissions by 95 %	4/15/2014 (after 4-12-13) 4/15/2015 (Group 1 tanks)
NESHAP HH	Valves at natural gas plants	500 ppm leak definition	10/15/2013
NSPS OOOO	Re-fractured/other gas wells	Combustion device for flowback emissions	By 1/01/2015
NESHAP HH	Large glycol dehydrators	Reduce air toxics by 95% or benzene to < 1 TPY	By 1/01/2015
NESHAP HH	Small glycol dehydrators	BTEX emissions <0.9 metric TPY	By 1/01/2015

Well Completions

- Applies to hydraulically fractured natural gas production wells drilled after August 23, 2011
- Training to capture flow back vent gas by “green completion” process
- Fractured/re-fractured wells may use flaring until 1/1/2015
- Gas capture required after January 1, 2015
- Re-fractured wells not considered affected facilities for permit trigger if green completions used & do recordkeeping/reporting
- Exploratory, delineation and low-pressure wells are exempt from green completion requirements but will be required to flare
- Streamlined well completion notification and reporting requirements
 - Email notice to EPA/State/Local agency at least 2 days before [EPA - R6wellcompletion@epa.gov](mailto:EPA-R6wellcompletion@epa.gov)
 - Annual well reports – traditional or list of wells with digital stamped photos

Storage Vessels

- Phased in requirement - reduce VOC emissions from new/modified tanks over 2-3 years
- Ensure enough combustion devices are available to reduce the emissions
- Requirement applies to both oil and natural gas production tanks
- No change to MACT for storage tanks BUT...
Natural gas storage tank emissions will be counted toward major source determination under oil & natural gas production MACTs
- Condensate tanks >6 tons/year emissions must reduce by 95% (typically by flaring)
- Annual tank reports – Group 1 only were due 1-15-14

Centrifugal & Reciprocating Compressors

- **VOC reduction required for compressors with wet seal systems only**
- **Requirements do not apply for natural gas transmission and storage segment (VOC emissions generally are low)**
- **Reciprocating compressors - replace rod packing every 26,000 hours of service (monitoring and documenting of hours required) or every 36 months (monitoring and documenting hours not required)**

Pneumatic Controllers

- **Controllers are used to regulate conditions such as pressure and temperature**
- **Rule affects high-bleed controllers**
 - **>6 SCFH between wells and gas plants - achieve bleed rate <6 SCF/hr**
 - **>6 SCFH at gas plants - achieve Zero bleed rate**
- **Allows use only for critical applications, such as emergency shutoff valves**
- **Intermittent and low bleed controllers not affected**
- **In natural gas sector, applies only to sources between the wellhead and transmission/distribution segments**

Valve Leaks & Sweetening Units

- **Sweetening Units (new/modified after 8-23-11)**
 - **Reduce SO₂ emissions by at least 99.9% at plants with sulfur production >5 long tons/day**
 - **Compliance date 10/15/2012 or at start up**
 - **Units with design capacity of H₂S in acid gas < 2 long tons/day exempt**
- **LDAR at gas plants (new/modified after 8-23-11)**
 - **Compliance date 10/15/2012 or at start up**
 - **Establishes a new leak definition for valves at gas plants as 500 ppm**
 - **Strengthens requirements for detection and repair to be consistent with NSPS Vva**
 - **Non-fractionating plants < 10 MMscf/day exempt**

1st Reconsideration

78 FR 58415, September 23, 2013

- **Affected tanks must control VOC by 95% or meet alternate emission limit**
- **Phase in date by which tanks must install VOC controls**
- **Alternate emission limit < 4 TPY w/out control**
- **Clarified testing protocol for control equipment**
- **Clarified affected tanks**
 - **Constructed after 8-23-11**
 - **VOC potential emissions > 6 TPY**
 - **Store crude oil, condensate, unrefined intermediate hydrocarbons, produced water**
 - **Located anywhere in production segments**
 - **Group 1: >6 TPY, must reduce VOC by 95%**
 - **Group 2: <6 TPY (>4 TPY with or w/out controls, < 4 TPY w/out controls)**
- **Streamlined leak monitoring requirements while EPA addresses issues in 2nd reconsideration**
- **Deadline for submitting annual well completion reports changed to 90 days after first year and thereafter**

2nd Reconsideration (Proposed)

- Signed 7-01-14, pending FR publication
- Provides additional detail on well completion liquid handling and green completion requirements (3 stages)
- Clarifies requirements for storage tanks
- Opening definition of low-pressure well for comment and proposed language
- Clarifies that requirements for leak detection and repair apply only to onshore natural gas processing plants
- Updates requirements for reciprocating compressors to add 3rd work practice option
- Updates the definition of “responsible official” to allow delegation for sites <250 employees

Applicability Determinations and Regulatory Interpretations

- **NSPS OOOO task force – monthly conference calls since April 2012**
- **General determinations only, not site specific**
- **Applicability determinations:**
 - **Condensate stabilization units (CSUs)**
 - **Construct/modify dates for compressors**
 - **Flow-through vessels are not tanks**
 - **Natural gas condensate wells are affected facilities**
- **Regulatory interpretations:**
 - **Well photos with date/GPS stamp below photo**
 - **Group 2 tanks not included in Group 1 tank report**
 - **Flare under NSPS OOOO defined as having an open flame**
 - **Pipelines in production segment are affected facilities**
- **Site specific ADs/RIs will be posted to ADI database**
- **Most requests relate to tank issues**

More Information

- Oil & gas air pollution standards
<http://www.epa.gov/airquality/oilandgas/index.html>
- Oil and gas white papers
<http://www.epa.gov/airquality/oilandgas/whitepapers.html>
- NSPS Subpart OOOO web site
<http://www.epa.gov/airquality/oilandgas/actions.html>
- Oil & Gas industry home page
https://www.usoga.org/en/oil_gas_forums/?s=AK31RTkACHUhRIu5

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